

How Do You Know When You Have Interoperability?

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Patient matching will lead to interoperability, Pew says

In a letter to CMS, Pew says patient matching unlocks critical information, but identification is often elusive and better standards are needed.

By **Bernie Monegan** | June 26, 2018 | 10:30 AM



CMS unveils new Data Element Library to support interoperability for post-acute care

The database will help EHR vendors incorporate health IT standards to smooth the exchange of patient information across care settings.

By **Mike Miliard** | June 21, 2018 | 01:43 PM



Next-gen interoperability: AI, blockchain, FHIR and open source analytics

Healthcare has struggled with data sharing for a long time but, even still, experts said the future will be robust as emerging technologies and standards become more common.

By **Bill Siwicki** | June 27, 2018 | 09:35 AM



Pew to CMS: Patient matching is 'key' to healthcare interoperability

Written by **Jessica Kim Cohen** | June 27, 2018 | [Print](#) | [Email](#)

The Pew Charitable Trusts penned a June 25 letter to CMS emphasizing that improvements to patient matching are a "key building block for interoperability."

The research and policy organization wrote its letter in response to the Inpatient Prospective Payment System proposed rule, which CMS released in the *Federal Register* May 7. The annual Medicare inpatient payment update includes various changes, including a greater emphasis on ensuring interoperability among EHRs.

In its letter, The Pew Charitable Trusts argued improved patient matching — the ability to link a patient to his or her health records across multiple locations and EHR systems — is a necessary and foundational step for CMS to achieve its interoperability goals. The Pew Charitable Trusts cited research that patient matching rates are as low as 50 percent when attempting to link records across separate facilities.

"Improving patient match rates is critical as we consider a system that allows patients to access care anywhere they wish to receive it," the letter reads.

To address challenges related to patient matching, The Pew Charitable Trusts said it is researching best practices to solve this interoperability problem. As an example, the organization said it is assessing whether using more detailed demographic data, such as patients' names and dates of birth, might improve

Interoperability experts take aim at ONC Trusted Exchange Framework

By **Greg Slabodkin**

Published July 09 2018, 7:30am EDT

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A draft framework developed by the Office of the National Coordinator for Health IT meant to help achieve nationwide interoperability across disparate health information networks is counterproductive, according to prominent HIT experts.

Released this past January, the [Trusted Exchange Framework and Common Agreement \(TEFCA\)](#) is designed to support nationwide interoperability by outlining a common set of principles, as well as minimum terms and conditions for trusted data exchange.

"It will seek to scale interoperability nationwide and enable participating networks to work together to provide an on-ramp to electronic health information regardless of what health IT developer a provider uses, health information exchange or network a provider contracts with, or how far across the country the patients' medical records are located," wrote

CMS creates Chief Health Informatics Officer position to lead interoperability push

The CHIO will support health IT management and technology innovation policy within the agency, while coordinating those efforts among staff.

By **Jessica Davis** | June 26, 2018 | 01:27 PM



AHA opposes linkage of interoperability to Medicare participation

By **Fred Bazzoli**

Published June 27 2018, 7:28am EDT

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The American Hospital Association has come out against federal prop requirements to promote interoperability to conditions of participation program for hospitals and critical access hospitals.

The AHA's comments are included in its response to proposed rules for

ONC to award up to \$2M for health IT interoperability solutions

By **Greg Slabodkin**

Published July 03 2018, 7:28am EDT

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The Office of the National Coordinator for Health IT is making available as much as \$2 million in funding for solutions to healthcare industry challenges that continue to inhibit HIT interoperability.

Specifically, ONC is looking to address "well-documented and fast-emerging challenges" in two areas of interest: expanding the scope, scale and utility of population-level data-focused application programming interfaces (APIs), and advancing clinical knowledge at the point of care.



Interoperability?

- I send my BP to my PCP and she understands it.
- I share data between two clinical groups within Duke.
- I share data among the 4 hospitals withing the Duke system.
- I share data between Duke and UNC systems.
- I share data from Duke to an unknown hospital in San Francisco.



The goal

- It is impossible to accomplish something that is not defined.
- We need to understand the concept – what we want to do – rather than trying to focus on the word.
- What we really want to do is to make things work.
- We address the scope in terms of what we are trying to do.



Definitions of Interoperability

- HL7 working definitions
 - Functional – the ability to exchange data without error
 - Semantic - the ability to interpret and to make effective use of the data so exchanged
- My perspective
 - The ability to share data whose meaning is unambiguously clear, its context understood, and it can be used for whatever purpose and
 - the receiver may not be previously known to the sender



**Semantic
Interoperability**

Consumer Interoperability

**Communications, networking
Interoperability**

Functional Interoperability

**Business
Interoperability**

**International
Interoperability**

**Stakeholder
Interoperability**

**Security/Privacy
Interoperability**

**Legal, ethical, societal
Interoperability**



Semantic Interoperability

- How do we “name” or represent data?
 - Vocabulary or terminology (controlled)
 - Classification
 - Ontology
- Purpose of coding system
- Granularity and richness



SNOMED –CT

LOINC

MedDRA

RxNORM

ICD -10 and 11

OBO

NLM VSEC

OMOP

i2b2

UMLS

ONC – US Core

CDISC

CIMI

BRIDG

CIIC

SENTINEL

MESH

PCORnet

HL7

AHRQ

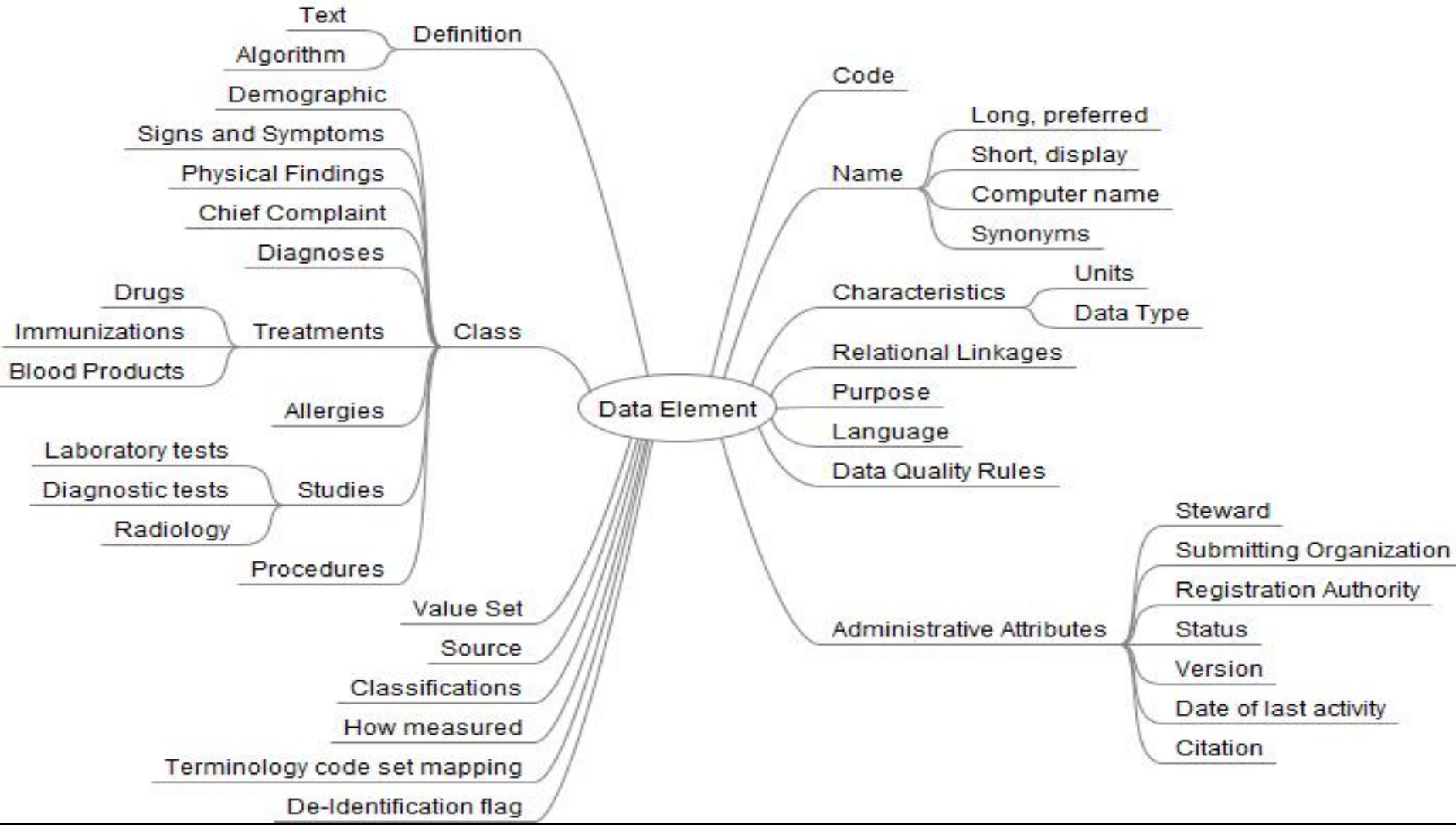
Narrative



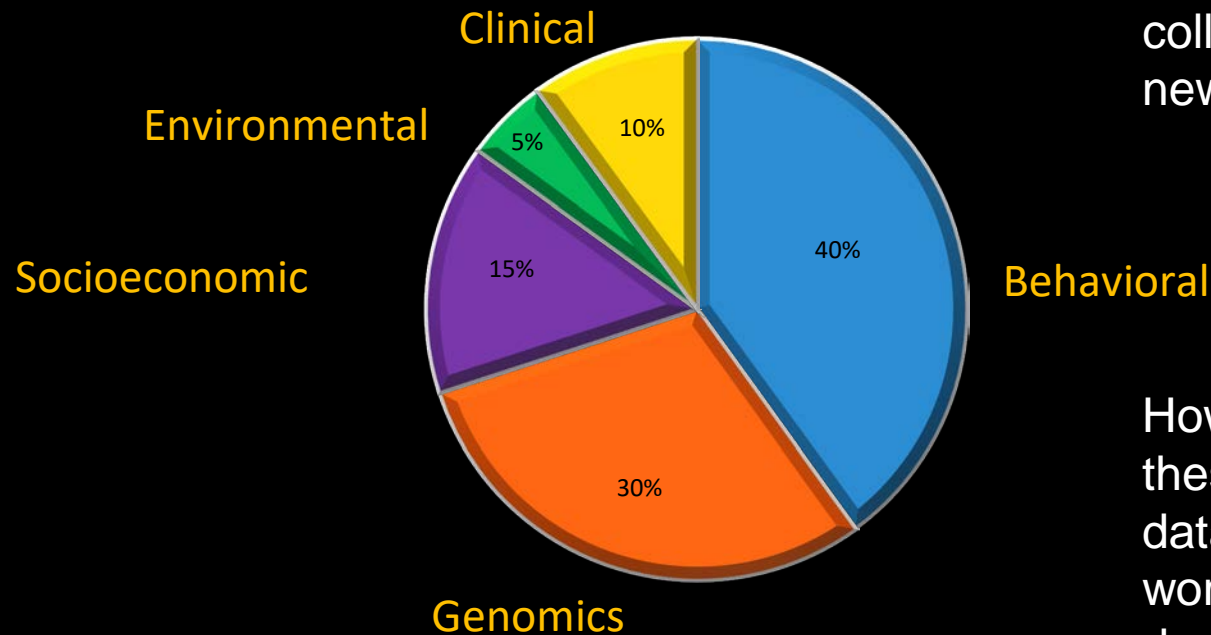
Enemies of Semantic Interoperability

- Local vocabularies
- Incomplete specifications
- Partial use of value sets
- Mapping to Common Data Set
- Optionality vs Conditionality





Health Indicators



We need new data representations, new collection methods, new use algorithms.

How do we introduce these new kinds of data into the workflow and decision making?

Source: McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. Health Aff. (Millwood) 2002;21: 78-93



Data Collection

- Structured data
 - Drop down lists
 - Completers
 - Look-ups
 - Modifiers
- Free text or narrative
- Who enters and when
- Quality checks on entry
- Goal of totally automated data collection
- Wearables



Functional Interoperability

- Issues of patient identity
- Issues of knowing where to look for data
- Issues of how much, what, when
- Issues of with whom to share
- Issues of extraction, delivery, storage, and use
- Issues of knowing how data is represented
- Issues of knowing what data does not exist



Future looks bright

- FHIR ® - Web-based, uses REST (get, put, update, delete)
 - RESOURCES
 - Defines logical, related compound structures for data exchange
 - Composed of atomic discrete units of defined behavior and meaning
 - PROFILES
 - Identify packages of data to address specific needs
 - Extensions – permits user-created content



Tightening Functional Interoperability

- Use data elements to define atomic contents of Resources – tightly bound
- Rather than open extensions use process by which developer can submit an extension as a new or modified resource to be vetted and potentially become part of core
- New data elements can be defined and presented in the same way.
- Vetting is by small groups of domain experts and not by consensus



SMART ®

- Standard for APIs
- Defines profiles that carry out the functions of the app
- Provides standard mechanism for extracting data from EHR in vendor agnostic method
- Needs expanding to any reasonable database type.



CDS Hooks

- Enables use part of functional interoperability
- Permits modification or addition to work flow
- Permits integration of new functionality into, checks, advice, and decision support into EHR in vender neutral way



Stakeholder Interoperability

- Who influences what really happens in health care?
- BIG Pharma (TransCelerate)
- Payers (Da Vinci)
- Government (CMS, FDA, CDC, ONC?)
- Laboratory vendors



Consumer Interoperability

- Health over illness
- Behavior modification
- Delivery of care to site of patient; patient influences when encounter occurs
- Continuous collection of data; continuous analysis of data; continuous decision making

Reverse flow of data from patient to system



Business Interoperability

- Shift away from large hospitals
- Shift away from brick and mortar
- Fewer professionals required
- Increased automation through Artificial Intelligence and robotics
- New roles for leadership; new skills required



Regulatory Interoperability

- New responsibility for regulators as more automation enters into the market
- Increased dependence of EHR data for clinical trials
- Faster tracking of regulations to new technology, new policies, new risks



Governance Interoperability

- Increased emphasis on data sharing
- Debates over control and ownership of data
- New uses of data for patient care, extraction of new knowledge, marketing, research, etc.
- Audit trails



Privacy and Security Interoperability

- Who defines the rules
- Personal vs societal concerns
- Increased risks of harm and abuse
- Tracking violations



International Interoperability

- Language
 - English as global language for health?
- Culture and customs
- Who controls
- Example – drug formulary



Unanswered

- How long will it take to build the perfect system?
- Will we ever have a perfect system?
- Does it matter?

